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OFFICE OF NAVAL RESEARCH

SICGUNI . A. ANCH

RCBL 472

121-021 7/23/53

FINAL REPORT

Title of Project: Serum Proenzyme (NR 121-021)

Period Reported: January 1, 1953 - June 30, 1953.

Date of Submission: July 20, 1953.

Name of Contractor: University of Detroit.

Principal Investigator: Earl B. Gerheim, Ph.D.

Contract Number: Nonr - 07400

During this last six month period we cannot report any new findings. We have secured additional data to support our claim of a highly purified human profibrinolysin; this was one of the primary objectives when this grant was initiated. Our other objective was to activate profibrinolysin with purified activators. Since the principal investigator has shown qualitatively that Staph. aureus produces two exotoxins, one which clots plasma and the other activates the proenzyme, profibrinolysin, the quantitative separation of the above factors was initiated. This was accomplished only within the last year; methyl alcohol precipitation with controlled pH was the successful tool. It bears repeating that the dialysate from brain heart infusion did not furnish a good growth substrate; artificial media failed also in our hands.

I feel that we have fulfilled our first objective and while the second objective was not completely fulfilled the quantitative separation of the coagulase factor and staphylokinase does contribute much to the problem.

All our work on this project is fully covered in the aggregate of our progress reports, abstracts of the papers presented, publications, and papers in the press. When the papers listed below (preliminary copies already made available to ONR at the time the papers were submitted for publication) are finally published said reprints will be forwarded.

I find it rather hard to evaluate the degree to which our work has contributed to scientific knowledge and to the Naval Research program. As stated above we almost completed our stated objectives of three years ago.

I certainly do not have any criticism of the administration of this contract. This has certainly been a pleasant association on my part, and I am extremely grateful for ONR support.

Papers Given Before Scientific Societies:

1. Gerheim, E.B., Floyd, H.M., Okubo, J., Morris, R., and Prins, R., The Mechanism of Staphylococcal Coagulation and Fibrinolysis, Dental Research. (Given before the International Society for Dental Research last March in Philadelphia).

2. Gerheim, E.B., Prins, R., Okubo, J., Morris, R., Floyd, H.M., and Neil, D., Further Differentiation of Staphylocoagulase and Staphylokinase, Fed. Proc., 12 44, 1953.

Paper Published:

1. Gerheim, E.B., Floyd, H.M., Weitzenhoffer, A.M.,
and Okubo, J., Electrophoretic and Chromatographic Studies
of Purified Human Profibrinolysin, Science, 117, 666, 1953.

Papers to be Published:

1. Gerheim, E.B., Chromatographic and Electrophoretic
Properties of Human Profibrinolysin, Proc. Soc. Exp. Biol.
and Med. In press.

2. Gerheim, E.B., The Separation of Staphylocoagulase
and Staphylokinase, J. Imm. In press.